



MARK UP VERSION SHOWING CHANGES ✓

In the Specification:

The paragraph spanning pages 7-8 was replaced as follows:

-- The advantages of this invention will be better understood by referring to the accompanying drawings, in which **Fig. 1** shows a top view of a typical profile of a power micro-via forming a cross along with a conventional via. **Fig. 2** shows the definition of length and width of a via in a top exterior view using a cross or "+" shaped via. **Fig. 3** shows an alternate Profile-1 forming an elbow or "L" shaped via. **Fig. 4** shows an alternate Profile-2 forming a "U" shaped micro via. **Fig. 5** shows an alternate Profile-3 forming a double cross micro via that is not based on [the] a round circular format or where the shape is not centered on the circumference or pitch of [the] a circle diameter. **Fig. 6** shows an alternate Profile-4 forming an "E" shaped micro via that is not based on [the] a round circular format or where the shape is not centered on the circumference or pitch of [the] a circle diameter. **Fig. 7 and Fig. 8** show[s] the Manhattan Interconnect Strategy. **Fig. 9 and Fig. 10** show[s] an alternate guard trench. **Fig. 11 and Fig. 12** show[s] a double guard trench. **Fig. 13** shows a cross section of a micro via of the present invention. --

The paragraph spanning lines 8-24 of page 14 was replaced as follows:

-- The micro milled trenched is a third form for using the micro via concept of having a non-circular or round cross section. Trenching is a slot that is "micro milled" using plasma or laser processing or other method if removing away material about a centerline. This slot is greater in depth than one layer. Trenching is similar to the 1D-3D via formats shown previously.

The difference between 1D-/[3D vias and trenching is length, the vias with a larger ratio than [that] 3.0 : 1.0 is for this patent called trenching. This does not mean that the two are not interchangeable. There will be instances where the trenching could possibly be smaller than a ratio of 3D, such as the case of a trench having a length greater than two times a breath of the trench, so this must be taken into consideration for this invention. Trenching can be used for EMC screening but this technique can be used for all known reference plane or screening techniques that control signal integrity in laminate interconnect solutions. This trenching can be used on the edge of PCB's or within the area of the PCB. Trenching can be used in all PCB or application specific module types. It offers significant signal performance increases, but at a potentially lower layer count and hence lower production costs. --

In the Drawings:

Proposed new drawing figure 13, as shown in the attached Proposed Drawing Correction, was added.

In the Claims:

The claims were amended as follows:

9. (Amended) A reference plane structure of a printed circuit board for fixing a potential reference for a plurality of wiring circuit trace layers that are electrically isolated there between by a plurality of printed circuit board layers and having a printed circuit board first layer with a main surface, characterized by:

a first wire trace circuit layer applied to said main surface;

a first printed circuit board-insulating layer formed over said first wire trace circuit layer;

a first reference plane applied over the first printed circuit board insulation layer;

a trench having an interior wall and extending about a perimeter encompassing the first wire trace circuit layer and extending through the printed circuit board first layer, extending through and exposing the first wire trace circuit layer, extending through the first insulation layer and extending to the reference plane exposing said reference plane; and

a conductive plating layer on the interior wall electrically connecting the first wire trace layer to [the] a grounding plane.

The following new claims were added:

27. (New) The wiring connection structure of claim 3, wherein said convoluted shaped cross section is a square.
28. (New) The method of interconnecting a plurality of wire traces of claim 17, wherein translating the cutting means forms a square.